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Project Report: Geochemical–Microbe Interactions in Chemolithoautotrophic Communities on Earth

***Project Investigator:***

***Tom McCollom***

### Project Progress

Although Dr. McCollom's funding as an NAI team member does not begin until Fall '04, initial research on the project has already begun. The goal of the research is to develop numerical models of chemosynthetic–based ecosystems on Earth that will provide insights into possible analog environments on the early Earth, Mars and Europa. Towards this end, numerical models of serpentinization of ultramafic rocks and their potential to support chemolithoautotrophic microbes has been initiated. While it is too early in this research to draw specific conclusions, the initial results suggest that H<sub>2</sub>–based microbial communities living on ultramafic rocks in the subsurface should be much more productive by several orders of magnitude than those based on basaltic or granitic rocks.